

Appl. No. : 10/795,765
Filed : March 8, 2004

REMARKS

Claims 1, 2, and 4-18, remain pending in the present Application, Claims 19-23 having been canceled without prejudice or disclaimer and Claims 1, 4, 5, 7-9, 11, 12, 16, and 18 having been amended. The claims set forth above include markings to show the changes made by way of the present amendment, deletions being in ~~strikeout~~ or ~~[[double brackets]]~~ and additions being underlined.

In response to the Office Action mailed July 18, 2008 Applicant respectfully requests the Examiner to reconsider the above-captioned application in view of the following comments.

Claim 8 Is Not Objectionable

Claim 8 stands objected to based on the informality contained in the phrase "the the shaft." In the response, Applicant has amended this phrase to read, "the shaft." Thus, Applicant submits the present objection as now moot.

Claims 4, 5, 7-9, 18 And 23 Stand Rejected Under 35 U.S.C. § 112, Second Paragraph, As Being Indefinite.

Claims 4, 5, 7-9, 18 and 23 stand rejected under 35 U.S.C. § 112, second paragraph. Applicant respectfully traverses the present rejection. However, in order to expedite prosecution of the present application, Applicant has amended the claims solely to make these claims more easily readable and not to narrow or affect the scope of the claims.

Additionally, Claim 23 has been canceled without prejudice or disclaimer. Thus, this rejection is now moot.

In response to the rejection of Claims 4, 5, 7-9, and 18 based on the phrase "the signal generator," Applicant has amended all these claims, as well as Claim 11, to recite "the first signal generator." Applicant thus submits the present rejection is now moot.

Newman Does Not Anticipate Claims 1, 2, 6, 10-13, 16, 17, And 19-23

Claims 1, 2, 6, 10-13, 16, 17, and 19-23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,741,166 issued to Newman. Applicant respectfully traverses the present rejection. However, in order to expedite prosecution of the present application, Applicant has amended the claims and has canceled Claims 19-23 with prejudice or disclaimer. Applicant expressly reserves the right to further prosecute the original version of Claims 1-23 through continuation practice.

Briefly, the present inventions are directed to problems associated specifically with designing and manufacturing outboard motors. As noted in the background of the present Application, recently, different types of electrical remote control systems have become more widely available. These types of remote controls can include throttle, gear shift, and/or steering functions.

The older mechanical variation of these types of remote control systems are connected to outboard motors with control cables, such as Bowden wire cable arrangements to provide throttle, gear shift, and steering operations.

The more recently introduced electronic versions of remote control systems include sensors to detect the movement of the levers and steering wheels mounted in the operator's area of an associated boat. As such, the remote control systems transmit signals to the associated outboard motor. The outboard motor includes some type of an electrical control unit which interprets the signals for throttle, gear shift, and/or steering operations.

As noted in the description of related art in the present Application, outboard motor manufacturers have offered two types of outboard motors, one type adapted to the *mechanical control system*, and another adapted to the *electrical type of control system*. However, this is more burdensome than necessary. See Present Application, ¶ [0006]. It is important to note that an owner of an older boat having a *purely mechanical remote control system* can more easily replace an outdated outboard motor as long as it includes connections for cable-type remote control systems.

Thus, in accordance with some of the inventions disclosed herein, an outboard motor is provided with the ability to receive purely mechanical inputs as well as electronic inputs from remote control systems. Further, in order to simplify the control system, some of the outboard motors in accordance with some of the inventions disclosed in the present application include an electronic signal generator that converts the purely mechanical movements into electrical signals which are used to control engine operation. Thus, the electronic control unit can operate in essentially the same way regardless of whether it receives inputs from a mechanical remote control system or electronic remote control system.

For example, as illustrated in Figures 2 and 6, regardless of whether a mechanical remote control system (Figure 2) is used or an electronic remote control system (Figure 6) is used, the

throttle valve 102 of the outboard motor 32 is driven by an electric throttle valve actuator 106. This helps reduce the size and complexity of an electronic control unit because it is only required to be programmed to operate in a single mode. This is in contrast to a system which may require different programming to operate in a purely mechanical mode in which mechanical cables from a mechanical remote control system would be connected directly to the throttle valve and an electronic mode in which an electronic actuator would be required to move the throttle valve in response to signals generated by an electronic remote control system (Figure 6).

Thus, by constructing the control system for an outboard motor such that it includes a signal generator disposed within the outboard motor that can be connected with a mechanical type remote control system as well as an input for an electronic remote control system. Further, in order to make this outboard motor control system readily usable with each of these types of systems, the control unit is configured to determine if the signal generator associated with the mechanical connection is connected. If the signal generator associated with the mechanical connection is not connected to the electronic control unit, then the electronic control unit will use the signals delivered to it from the electronic remote control system. As such, the outboard motor can easily be configured for a mechanical or electronic remote control operation.

With regard to the Newman reference, this reference fails to teach an outboard motor control system which includes a mechanical connection for operation with a mechanical remote control system and an electronic connection for an electronic remote control system. Further, the Newman reference fails to teach an outboard motor having a signal generator disposed within the outboard motor and mated with a mechanical connection so as to convert the mechanical movements from the mechanical remote control system into an electronic signal. Finally, the Newman reference also fails to teach an electronic control unit configured to determine whether or not the signal generator associated with a mechanical connection is connected and to use the electronic signals from the electronic remote control if the signal generator associated with the mechanical connection is not connected.

In contrast, Claim 1 now recites, among other recitations, "A control system for an outboard motor comprising a change element disposed in the outboard motor and configured to change an operational condition of the outboard motor, an actuator disposed in the outboard motor and configured to actuate the change element, a control device disposed in the outboard

Appl. No. : 10/795,765
Filed : March 8, 2004

motor and configured to control the actuator, a first signal generator disposed in the outboard motor and configured to convert physical movement to a first command signal and to output the first command signal to the control device, the first signal generator being configured to be mechanically connectable to a mechanical remote control device such that physical movement of the remote control device causes physical movement of a part of the first signal generator, the control device also being configured to be connectable to an electronic remote control device having a second signal generator configured to detect movement of a remote control lever and to output a second command signal, the control device being further configured to determine whether the first signal generator is connected to the control device and whether the electronic remote control device is connected to the control device, the control device also being configured to control the actuator based upon the second command signal from the electronic remote device if the first signal generator is not connected to the control device.”

Similarly, Claim 12 now recites, among other recitations, “A control system for an outboard motor having an engine comprising a throttle valve that regulates an amount of air to a combustion chamber of the engine, a throttle valve actuator arranged to actuate the throttle valve, a control device disposed in the outboard motor and configured to control the throttle valve actuator, an operative device remotely placed from the control device, the operative device having a first movable member, configured to be connectable to a second moveable member disposed remotely from the operative device with a mechanically connecting member having a plurality of ends, one end of the connecting member coupled with the first movable member and another end of the mechanically connecting member coupled with the second movable member, a signal generator disposed in the outboard motor and configured to output a first command signal to the control device based on a position of the second movable member, the movement of the second movable member being determined by the mechanically connecting member, the control device being configured to determine whether the signal generator is connected to the control device and to control the throttle valve actuator based upon a second command signal from an electronic remote device only if the signal generator is not connected to the control device.”

Thus, Applicant submits that Claims 1 and 12 clearly and non-obviously define over the Newman reference. Additionally, Applicant submits that Claims 2, 6, 10, 11, and 13 also define

Appl. No. : 10/795,765
Filed : March 8, 2004

over the Newman reference, not only because they depend from one of Claims 1 or 12 but also on their own merit.

Newman Does Not Make Claims 4, 5, 8, And 14 Obvious

Claims 4, 5, 8, and 14 stand rejected under 35 U.S.C. § 103(a) as being obvious over Newman. Applicant respectfully traverses the present rejection. However, as noted above, Applicant submits that Claims 1 and 12 clearly and non-obviously define over the Newman reference. Thus, Applicant submits that Claims 4, 5, 8, and 14 also define over the Newman reference, not only because they depend from one of Claims 1 or 12, but also on their own merit.

The Proposed Combination Of Okita/Hoshina Does Not Make Claims 1, 2, 4-7, 9, And 18 Obvious.

Claims 1, 2, 4-7, 9, and 18 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,094,122 issued to Okita in view of U.S. Patent No. 6,675,733 issued to Hoshina. Applicant respectfully traverses the present rejection. However, Applicant has amended Claims 1 and 18. Applicant expressly reserves the right to further prosecute the original versions of Claims 1-23 through continuation process.

As noted in the Office Action, Okita discloses a remote control system for an outboard motor. In the Okita reference, two remote controls stations 11, 12 are connected to a remote control mechanism or joint unit 25 in which the mechanical movements transferred to the unit 25 through mechanical cables are converted into electronic signals. Electronic signals are then processed and transferred to an electrical control unit 27. This electrical control unit 27 then converts the final result of the processed initial values to a *physical movement* of a control cable of 28. This is connected to the outboard motor 13, but no other details about how the outboard motor uses the movement of the cable 28 to control operation.

However, the Okita reference is not directed to a system for an outboard motor in which the system can be connected to a mechanical remote control and an electronic remote control. It was the Examiner's position that it would have been obvious to one of ordinary skill in the art to include a controller being attachable to the electronic remote control in accordance with the Hoshina reference.

The Hoshina reference discloses a propulsion system for an inboard powered boat (as shown in Figure 5). In this system, an electronic remote control device can be connected to a

Appl. No. : 10/795,765
Filed : March 8, 2004

control circuit for the engine (which is not shown or otherwise described in the Hoshina reference).

Applicant submits that any obvious combination of the Hoshina and Okita references would result in the electronic remote control unit of Hoshina being connected, with the electronic cable 18, to the joint unit 25 of Okita. This obvious combination would not result in an outboard motor control system in which a mechanical connector is connected to a signal generator *within the outboard motor* and another connector for connection to an electronic remote control unit *also disposed within the outboard motor*. Rather, the proposed combination would merely result in the very same outboard motor illustrated in Okita being used in the system.

In contrast, Claim 1 now recites, among other recitations ““A control system for an outboard motor comprising a change element disposed in the outboard motor and configured to change an operational condition of the outboard motor, an actuator disposed in the outboard motor and configured to actuate the change element, a control device disposed in the outboard motor and configured to control the actuator, a first signal generator disposed in the outboard motor and configured to convert physical movement to a first command signal and to output the first command signal to the control device, the first signal generator being configured to be mechanically connectable to a mechanical remote control device such that physical movement of the remote control device causes physical movement of a part of the first signal generator, the control device also being configured to be connectable to an electronic remote control device having a second signal generator configured to detect movement of a remote control lever and to output a second command signal, the control device being further configured to determine whether the first signal generator is connected to the control device and whether the electronic remote control device is connected to the control device, the control device also being configured to control the actuator based upon the second command signal from the electronic remote device if the first signal generator is not connected to the control device.”

As noted above, this type of arrangement provides an important advantage with regard to the types of outboard motors that can be manufactured to be installed into new boats using all electronic remote control units as well as older boats which have mechanical remote control systems in place. Thus, the same outboard motor can be used in both situations.

Appl. No. : 10/795,765
Filed : March 8, 2004

With regard to Claim 18, Applicant wishes to note that neither of the Okita or Hoshina references teaches a system which emits an audible or visual alarm when *neither* mechanical or electronic remote control system is connected.

In contrast, Claim 18 now recites, among other recitations, “wherein the control device has an input unit, the first signal generator or the position sensing device is selectively connected to the input unit the control system also includes a visual or audible indicator that indicates none of the first signal generator and the position sensing device is connected to the input unit.”

Thus, Applicant submits that Claim 18 clearly and non-obviously defines over the cited references.

Finally, Applicant submits that Claims 2, 4-7, and 9 also define over the cited references, not only because they depend from Claim 1, but also on their own merit.

CONCLUSION

The undersigned has made a good faith effort to response to all of the rejections and objections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant’s attorney in order to resolve such issue promptly.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,
KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: November 18, 2008

By: /Michael Guiliana/

Michael A. Guiliana
Registration No. 42,611
Attorney of Record
Customer No. 20,995
2040 Main Street
Fourteenth Floor
Irvine, CA 92614
(949) 760-0404